

ICM: H01L 21/331

CS: H01L 29/73

H01L 29/205

TI: HETEROJUNCTION ***BIPOLAR*** **TRANSISTOR***

AB: PURPOSE: To prevent the deterioration of the current amplification factor of the title ***transistor*** by suppressing a base current with time during the operation of the ***transistor***.

CONSTITUTION: An n-type GaAs collector buffer layer 1, undoped GaAs collector layer 2, indium-added carbon-***doped*** p-type GaAs base layer 13, n-type Al_{0.3}Ga_{0.7}As emitter ***cap*** **layer*** 5 are successively formed on a semi-insulating GaAs substrate S by epitaxial growth. After the layers are formed into mesa-type, an emitter electrode 6 composed of WSi/W, base electrode 7 composed of Ti/W, and collector electrode 8 composed of AuGe/Ni are formed. 9 and 10 in the figure respectively represent an inter-element separating layer and insulating layer.

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